

Dr. Eichler was barely forty-eight years of age, but before entering upon the absorbing duties connected with the University and Botanic Garden of Berlin he had already made a name as a botanical author.

For some years he was assistant to Von Martius at Munich, and succeeded him as editor of the colossal "*Flora Brasiliensis*," now nearly completed. This was in 1868, but he had previously been a considerable and excellent contributor to this work, having elaborated several difficult families in a masterly manner. The work by which he is more generally known is the "*Blüthendiagramme*," in which he admirably illustrates and explains the morphology and organogeny of the Phanerogamia. His labours were chiefly in the direction of morphology. His continued careful study of the female flower of the Coniferæ may be regarded as having finally settled the homologies of the different elements of the inflorescence of that family. One of his later contributions to science, if not his last, is entitled "*Zur Entwicklungsgeschichte der Palmenblätter*," in which the author fully elucidates the development of the various types of leaf in the Palmæ.

As a lecturer Dr. Eichler was exceedingly popular and successful; and he was regarded as an able administrator of the Botanic Garden. He was successively Professor of Botany at Munich, Gratz, Kiel, and Berlin, having been appointed to the last post in 1878. Two years later, "at the comparatively youthful age of thirty-nine," he was chosen a member of the Berlin Academy of Sciences; and in 1881 he was elected Foreign Member of the Linnean Society of London. He was also honorary and corresponding member of many other learned societies; and all who knew him, however slightly, will join in regretting his early death.

NOTES

BARON EGGERS, commissioned by Dr. Urban and assisted by the Royal Academy of Sciences of Berlin, is about to undertake the botanical investigation of the hitherto unexplored higher mountains of St. Domingo. The specimens collected for distribution will be arranged (under corresponding numbers) in two series. One will consist only of species which have not yet been distributed in Baron Eggers' West Indian collections; the other and larger series will include everything except the commonest tropical species. The first-named series will be disposed of at forty shillings per century, the latter at thirty shillings. Dr. J. Urban, assisted by other systematists, will determine the collections and receive the names of subscribers. As the expense and difficulty of transit in the island must limit the number of collections for sale, early application to Dr. Urban is desirable. Dr. Urban's address is Friedenau, bei Berlin.

A CONVERSAZIONE given by the Council of the City and Guilds of London Institute was held at the Central Institution, Exhibition Road, on Wednesday evening, the 16th inst., and was attended by about 1300 visitors. Lord Selborne received the guests. A large number of interesting objects of scientific and artistic interest were exhibited, and during the evening demonstrations were given by the Professors in the various departments, as well as by several gentlemen who are associated with the work of the Institute.

ON the 15th inst. a meeting was held at Grimsby to consider the expediency of establishing there an Institution for Technical Education with regard to Fish and Fisheries, and a Marine Fish-Culture Station. Mr. W. Oldham Chambers, Secretary of the National Fish-Culture Association, pointed out to the meeting the advantages of the proposed Station and Institute. Resolutions in support of the scheme were unanimously adopted,

and an influential local Committee was appointed to further the object in view. Letters have been received from the various Fish Trade Associations and other bodies, heartily approving of the undertaking. The Manchester, Sheffield, and Lincolnshire Railway Company are prepared to grant a site for the Institute, and to erect a building, free of cost, at Cleethorpe, near Grimsby.

WE are sorry to see that the income of the Mason Science College, Birmingham, during the year ending "Founder's Day," February 23, fell short of the expenditure by the sum of 1646*l*. After deducting what may be termed extraordinary expenditure, there remained a deficiency of 1074*l*. The Council, in their last report, remind the Trustees that the annual deficits, which since 1881 have been charged against the accumulated surplus, have now reduced this fund to the sum of 1419*l*., and that the estimates for the current financial year anticipate that the balance of the fund will be required. It is not creditable to the well-off citizens of Birmingham that an institution capable of doing great work for their town and district should have to meet these constantly recurring deficiencies.

THE spring meeting of the Institution of Mechanical Engineers, under the presidency of Mr. E. H. Carbutt, will take place on Monday, May 16, and the following day. On Tuesday, May 17, the Duke of Cambridge will dine with the members of the Institution.

IN order to determine between the rival sites for the Sedgwick Memorial Museum at Cambridge, and at the same time advance the chances of proceeding early with a portion at least of the building, the Council of the Senate propose to submit a grace next term to settle the question of site. The grace will take the form of authorising negotiations with Downing College for a site opposite the old Botanic Garden. If this be rejected, the latter affords the only practicable site.

MISS GORDON has presented to the Museum of the Royal Gardens, Kew, the collections and drawings made by her late brother, General Gordon, illustrative of the *Coco de Mer* (*Lodoicea seychellarum*), a palm peculiar to the Seychelles, and remarkable, among other things, for possessing the largest known seed in the vegetable kingdom. The seeds are well known in European museums. One amongst General Gordon's specimens is a model which he had made of the fruit in its mature state, before the external fibrous but perishable husk had become detached. Some of the specimens are placed, with others already possessed by Kew, in No. 2 Museum. The rest will be shown, with the drawings made by his own hand, in No. 3 Museum.

THE Cambridge University Local Examination Report for the past year states that in zoology and physiology the answers showed very inefficient teaching. Botany is somewhat better done; but many senior candidates had not been taught the use of floral diagrams. In physical geography, while the answering was generally good, many had used antiquated text-books. Chemistry was fairly done, the candidates choosing, out of the alternative questions, the practical rather than the theoretical. Qualitative analysis was well done, both by seniors and juniors. The seniors showed general ignorance about the laws of multiple proportion, and combination by volume. Heat was badly done by both seniors and juniors. Many seemed never to have read any text-book, and to have presented themselves on the strength of a few isolated facts. Statics was very unequally mastered. There was better acquaintance with the mathematical than with the practical part of the subject. Electricity (senior subject) had not been studied seriously enough to warrant its inclusion in the examination. The mathematical subjects of the examination are reported on much more favourably.

THE botanical collections of the late Thomas Moore, F.L.S. Curator of the Botanic Garden at Chelsea, belonging to the Society of Apothecaries, have been acquired for the Herbarium of the Royal Gardens, Kew. The most important portions are:—(1) The general fern herbarium, which contains the types of the numerous species described by Moore, especially those introduced into European cultivation. (2) The collection of forms and varieties of British ferns, which is probably unique in richness and completeness; it is especially interesting as the basis of Mr. Moore's well-known and beautifully illustrated works on the fern flora of the British Isles. (3) The fern herbarium of R. Heward, F.L.S., which is especially strong in West Indian species.

BRITISH field botanists will be glad to learn that the Scottish Rights of Way Society has been successful in its action brought in the Court of Session against the proprietor of Glen Doll in Clova. Lord Kinnear has found that "the pursuers had established a sufficient use and possession of the road for more than forty years to entitle them to a judgment." There is probably no portion of the Highlands of Scotland from which botanists would feel it a greater hardship to be excluded. For years it has been so well watched by keepers that access to it has been impossible, except to such botanists as are swift and sure of foot. The present owner is the first who has denied a right of way through it, and, if we are not mistaken, the action only concerns this right to use the road. It is to be feared that efforts will not be wanting to confine the public to the road, and to deny all access to those parts so interesting to the field botanist.

A SERIES of charts showing the surface temperatures of the Atlantic coast waters, from the eastern coast of Maine to the extreme southerly coast of Florida, is being prepared by the United States Fish Commission. The Commission is aided in this important undertaking by the Lighthouse Board and the Signal Service. Observations have thus far been made at twenty-four lighthouse stations, showing the surface temperatures at these localities during the past five years. The temperatures at each station are shown in detail for each year by ten-day means, and the facts are combined with those brought out on a series of isothermal charts giving the relations of the different stations. The results are likely to be of great value in connexion with the study of the migration of the mackerel, menhaden, shad, and other migratory fishes.

AN interesting discussion has just been started in the Paris Academy of Medicine, concerning the bad results of mental straining in young persons. Attention has especially been called to the fact that many French girls, under the pressure of competition, are injuring their health by over-work at school. About 12,000 of them are trying to get the superior diploma which would confer upon them the right of getting an appointment in Government schools. Only 2000 will be able to get appointments.

AN excellent address on the physical training of girls was lately given by Dr. Rayner W. Batten to the Gloucestershire branch of the British Medical Association. It is printed in the *British Medical Journal*. Speaking of ladies' Colleges, Dr. Batten says he does not know of more than one that has such a thing as a proper playground, whilst a leading College, if not the first in the country, with abundant means and ample opportunities, makes no pretence of having any playground at all. Dr. Batten urges that drill and calisthenic exercises are not enough. There must be recreation as well, "and at present, in our ladies' Colleges," he says, "the exercise, with the exception of tennis, has little of the recreative element in it." Dr. Batten is of opinion that all Colleges

should have playgrounds—large spaces, open to the fresh air and sunlight—that every girl should be made to play, two half-holidays a week at least being given for that purpose, and that the games should be varied, so that girls may not have to go on doing what they are conscious of not doing well. "Every girl will soon find out her strong and weak points in play as well as in work, and if the game is to be a recreation she must be allowed to choose her own form, the only obligation being that she is to play, and that no books or work are to be brought on the playground."

AT the meeting of the Essex Field Club on Saturday next, the 26th inst., Prof. Sylvanus P. Thompson will read a paper on William Gilbert, the founder of the science of electricity, and an Essex worthy entitled to rank with Ray among the pioneers of science. Those wishing to attend the meeting should communicate with the Secretary, Buckhurst Hill, Essex.

ON the night of March 7, about 11.30, a brilliant meteor was seen in Dalarlia, in Central Sweden. It was first seen in the north-west, going in a southerly direction, but soon afterwards it changed its course more easterly. Its colour was a brilliant white, and its greatest size about that of the moon. It was lost to sight behind the horizon, leaving only a faint trail behind.

FROM a recent official French Report on oyster-culture in France we learn that the two principal centres are at Arcachon in the south-west and Auray in the north-west. The Bay of Arcachon has since 1854 held a foremost place in oyster-breeding. In 1857 there were twenty parks, or district oyster-beds: in 1865 the number had increased to 297, with an output of over 10,000,000 oysters. At the present time the little bay, which has a total area of 37,500 acres, has oyster-beds covering an area of 15,000 acres, which provide annually about 300,000,000 oysters for consumption. With regard to the oyster-beds at Auray, on the coast of Brittany, these, though not so important as those of Arcachon, have still a considerable output, and, from being exhausted and unproductive when their rehabilitation was first undertaken, have become full to overflowing. In 1876-77 we find that 7,000,000 oysters were placed on the market from Auray; in 1885 the number had risen to over 70,000,000.

THE ideas of M. Victor Meunier with regard to the domestication of apes are discussed in the new number of the *Revue d'Anthropologie* by Madame Clémence Royer, the French translator of Darwin. Madame Royer does not doubt that, under a proper system of training, apes might be made good workers. They lack perseverance, indeed, but in general intelligence they are, she thinks, superior to the dog, the horse, or even the elephant. She points out, however, that it would be necessary to feed domesticated apes with great quantities of fruit, bread, and eggs, that the process of educating them would be costly, and that for many generations they would probably be injuriously affected by the climate of Europe. Her opinion is that, if the experiment is to be made, it should be made first of all in tropical countries, where apes might be taught to labour in connexion with the cultivation of coffee, cocoa, and cotton.

AN interesting paper on "The Application of Gems to the Art of the Goldsmith" was read to the Society of Arts on Tuesday, the 15th inst., by Mr. Alfred Phillips. It is printed in the Society's Journal. Mr. Phillips gives a very favourable account of the capacity of English workmen employed by goldsmiths at the present day. When masters encourage them to depart from the beaten track, they readily adapt themselves, Mr. Phillips says, to work which, ten years ago, would have been sent as a matter of course to specialists on the Continent.

A HEALTH EXHIBITION will be opened in Warsaw on May 15 next.

AN International Agricultural Exhibition of Tools and Implements will be held at Parma in September next.

THE Royal Bavarian Academy of Sciences is collecting the numerous treatises of Joseph Fraunhofer, hitherto dispersed in numberless serials, and is about to publish them in one volume.

PROF. VERNEUIL AND L. H. PETIT have issued the first number of a periodical publication called "Études expérimentales et cliniques sur la Tuberculose." It is published by means of a fund especially raised for the promotion of the study of tuberculosis.

M. H. GADEAU DE KERVILLE has just published a work on evolution. It is entitled "Causeries sur le Transformisme," and contains an exposition of the facts and theories upon which the doctrine of evolution is based.

A BOOK on therapeutics, by M. G. Hayem, Professor in the Paris Medical School, has just been published.

THE February number of the Italian Geographical Bulletin contains a detailed account, by Dr. G. A. Colini, of the rich ethnological collection recently presented to the Prehistoric and Ethnographic Museum of Rome by General Genè, Commander of the Italian possessions on the East Coast of Africa. The collection includes a great variety of objects, such as arms, costumes, implements, ornaments, utensils from Abyssinia, Somali Land, and the Afar (Danakil) country. Amongst them are baking-ovens, braziers, incense-burners, cooking-utensils, pestles for grinding coffee, pepper, durraha, &c.; baskets, matting, veils, robes, loin-cloths, wooden sandals, lamps, swords, match-lock guns, knives, hairpins, &c., illustrating the arts and industries of the East African peoples.

WE have received the four latest Bulletins of the U.S. Geological Survey (Nos. 30-33). No. 30 contains Mr. C. D. Walcott's second contribution to "Studies on the Cambrian Faunas of North America." A systematic review of our present knowledge of fossil insects, including myriapods and arachnids, by Mr. S. H. Scudder, is presented in No. 31; and an elaborate account of mineral springs of the United States, by Dr. A. C. Peale, in No. 32. No. 33 is made up of notes, by Mr. J. S. Diller, on the geology of Northern California.

MR. EDWARD COOKWORTHY ROBINS, whose collected papers on technical education and applied science, buildings and fittings, &c., were reviewed in NATURE some time ago, is now engaged on a general work of reference on the same subject. It will appear shortly under the title of "Technical School and College Buildings," in a quarto volume of about 250 pages, with upwards of 100 full-page illustrations, plates, and maps.

IN the Proceedings of the American Antiquarian Society (vol. iv. p. 62) Mr. Frederick W. Putnam gives an account of twelve jade objects found in Nicaragua and Costa Rica, ten of which were ornaments made by cutting celts into halves, quarters, or thirds, a portion of the cutting edge of the celt remaining on each piece. Mr. O. W. Huntington, who was asked to report upon the nature and source of the material of these ornaments, is of opinion that the specimens "are unquestionably Chinese jade." They have, he says, "all the characters of that mineral, although the largest specimen from Costa Rica is rather unusual in its colour, and would not be taken for jadeite at sight." The *American Naturalist*, which calls attention to these facts, thinks "it will now be in order to collate during the next ten years the evidence for and against contact between the Orient and the western shores of America."

SOME interesting notes from Venezuela have lately been contributed by Dr. Ernst, of Caracas, to the Proceedings of the Berlin Anthropological Society. The writer brings together much valuable information as to the manners and customs of the aboriginal population, and about their food, ornaments, implements, weapons, and canoes.

THE additions to the Zoological Society's Gardens during the past week include a Mauge's Dasyure (*Dasyurus maugei* ♀) from Australia, presented by Mr. W. Miller; two White-crowned Pigeons (*Columba leucocephala*) from the West Indies, presented by Lieut.-Colonel Dawkins; two Long-tailed Grass Finches (*Poephila acuticauda*) from Australia, presented by Mr. Walter Burton; an Algerian Tortoise (*Testudo mauritanica*) from North Africa, presented by Mr. J. M. Green; a European Pond Tortoise (*Emys europæa*), South European, presented by Mr. Henry Garle; five European Tree Frogs (*Hyla arborea*), European, presented by Mr. F. W. Green; an Axis Deer (*Cervus axis* ♀), a Collared Fruit Bat (*Cynonycteris collaris*), sixteen Puff Adders (*Vipera arietans*), born in the Gardens.

OUR ASTRONOMICAL COLUMN

RESEARCHES ON THE DIAMETER OF THE SUN.—Herr Auwers has published in the *Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin*, 1886, No. 1., the first part of an elaborate investigation of the value of the sun's diameter as found from meridian observations, and of the apparent variations thereof. The discussion now published refers to variations in the mean annual values only of the diameter. The series of observations discussed are the meridian observations of the sun made at Greenwich, 1851-83; at Washington, 1866-82; at Oxford (Radcliffe Observatory), 1862-83; and at Neuchâtel (transit observations only), 1862-83. The "personal equations" of the various observers are first determined on the supposition that there may be periodic annual variations, both in the horizontal and vertical diameters of the sun, such for instance as have been supposed by Secchi and others to exist, with a period corresponding to the sunspot cycle. The first determination of "personal equation" is therefore made by comparing observations taken in each year with others taken in the same year only. The resulting diameters are, however, such as to convince Herr Auwers that, although inequalities exist in each of the series of observations discussed, their comparison with each other and with the sunspot curve is sufficient to show that they have no connexion either with the latter or with a progressive change, but are most probably due to uncorrected "personal equations." A second determination of these on the assumption that, for some observers at least, they are liable to change, but that the sun's diameter is not subject to annual variation, leads to much more satisfactory results, and is regarded by Herr Auwers as the correct solution of the problem. The effect of personality on the deduced solar diameter, which on the average, for an individual observer, amounts to about 1" (sometimes 3", 4", and even 10"), may be inferred from the fact that the values of the horizontal and vertical diameters of the sun, deduced from thirty-three years' observation with the Greenwich transit-circle, and referred to the mean of Dunkin, Ellis, Criswick, and J. Carpenter, as standard, are respectively 32' 2".48 and 32' 2".00; whilst, referred to the mean of fifty-four observers, the same observations give, for the horizontal and vertical diameters respectively, the values 32' 1".99 and 32' 2".73.

COMET 1887 b (BROOKS, JANUARY 22).—The following ephemeris for Berlin midnight, is by Dr. R. Spitaler (*Astr. Nach.* No. 2776).

1887		R.A.		Decl.		Brightness
		h.	m.	s.		
March 24	...	4	18	8	...	35° 46' 5" N. ... 0.72
26	...	4	21	20	...	34° 26' 1" ...
28	...	4	24	26	...	33° 8' 9" ... 0.66
30	...	4	27	26	...	31° 54' 9" ...
April 1	...	4	30	21	...	30° 43' 9" ... 0.61
3	...	4	33	11	...	29° 35' 7" N. ...

The brightness on January 24 is taken as unity.